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Changes in the functional state of spinal-cord cell structures under gravitational unloading

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Abstract

© 2016, Pleiades Publishing, Inc.The functional properties of the spinal-cord structures of experimental rats under a 7-day gravitational unloading were assessed using the method of transcranial magnetic stimulation. Hypogravity was modeled by hanging the animals by their tails in an antiorthostatic position. The gastrocnemius muscle potentials evoked by magnetic stimulation of the efferent structures of the spinal cord were registered. We found that gravitational unloading causes significant changes in motor-potential parameters and the central motor transmission time. We propose that the cause of the revealed transformations is afferent inflow limitation, first of all the motor type, as well as adaptation of the central nervous system to new conditions of motor activity.

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Keywords

evoked motor potentials, gravitational unloading, spinal cord, transcranial magnetic stimulation